

A NEW SPECIES OF PAZU OMAN FROM EASTERN CALIFORNIA  
(HOMOPTERA: CICADELLIDAE: DELTOCEPHALINAE)

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ABSTRACT.—A new species of *Pazu*, *P. monoinyo*, from the Inyo-Mono County area of California is described. Additional occurrence records are provided for *Pazu balli* (Beamer), and some of its morphological characteristics are illustrated and compared with *P. monoinyo*.

The monobasic genus *Pazu* was erected by Oman (1949) to include *Hebecephalus balli* Beamer (1946) from central Arizona. *Pazu* is distinguished from *Hebecephalus* primarily by the shape of the styles, which in *Hebecephalus* have the apical portion bent laterad to the shaft at right angles, forming an elongate, slender "toe." The type species of *Pazu* and the new species described here have more conventional, straighter styles (see Figs. 1E and 2E).

Specimens of this new taxon were collected from antifreeze (ethylene glycol) pitfall traps placed in sandy areas or on small sand dune habitats in a 78-km<sup>2</sup> area in Inyo and Mono counties near Bishop, California, and from a single location 42 km east of Bishop near Deep Springs. The area is semiarid Great Basin habitat irrigated in the lower areas by snowmelt runoff from nearby mountain peaks or from artesian springs. The traps were placed at these and other sand dune locations throughout the southwestern U.S. as part of a joint project between the California Department of Food and Agriculture and the U.S. Bureau of Land Management (BLM) (Andrews et al. 1979). The purpose of the project was to study the insect fauna associated with sand dune habitats as part of an effort by the BLM to preserve sand dune habitats.

The fact that all known specimens of *P. monoinyo* exhibit microptery and have been collected from just three pitfall trap locations indicates that the species may spend considerable time on the soil surface and on the crowns of the host rather than on aerial plant parts. Whether a fully macropterous form capable of

flight actually exists in certain situations is unknown. A macropter collected at Blythe, Riverside County, California, on 2-IV-63 is nearly identical in color pattern to *P. monoinyo*; however, the specimen is missing the abdomen, thus making accurate identification impossible. If such a form does exist, it is probably not common and may explain why the species has previously gone undetected. In all collection locations the dry sand dune habitats were in close proximity to water and the lush vegetative growth associated with it. The dune site east of Bishop, California, is within 100 m of the Owens River; the Fish Slough and Deep Springs locations are adjacent to a series of artesian springs. Since the species has not been collected from other sand dune localities, it would appear that the species lives and feeds in or on the crowns of plants, presumably grasses, near permanent sources of surface water. However, several attempts to re-collect the species at two of the known localities have failed.

*Pazu monoinyo*, n. sp.

DESCRIPTION.—Resembles *P. balli* (Beamer) but with darker, more distinct markings and different genitalia.

EXTERNAL CHARACTERISTICS.—Ground color apparently cinereous, although the possible color-altering effects of the antifreeze and alcohol preservatives leave the actual color in doubt. Markings fuscous. Crown with a broad, longitudinal pair of lines, each with a central cinereous line, so that the markings appear as two pairs of fuscous lines on either side of the midline; with a fuscous spot between each ocellus and compound eye. Frons

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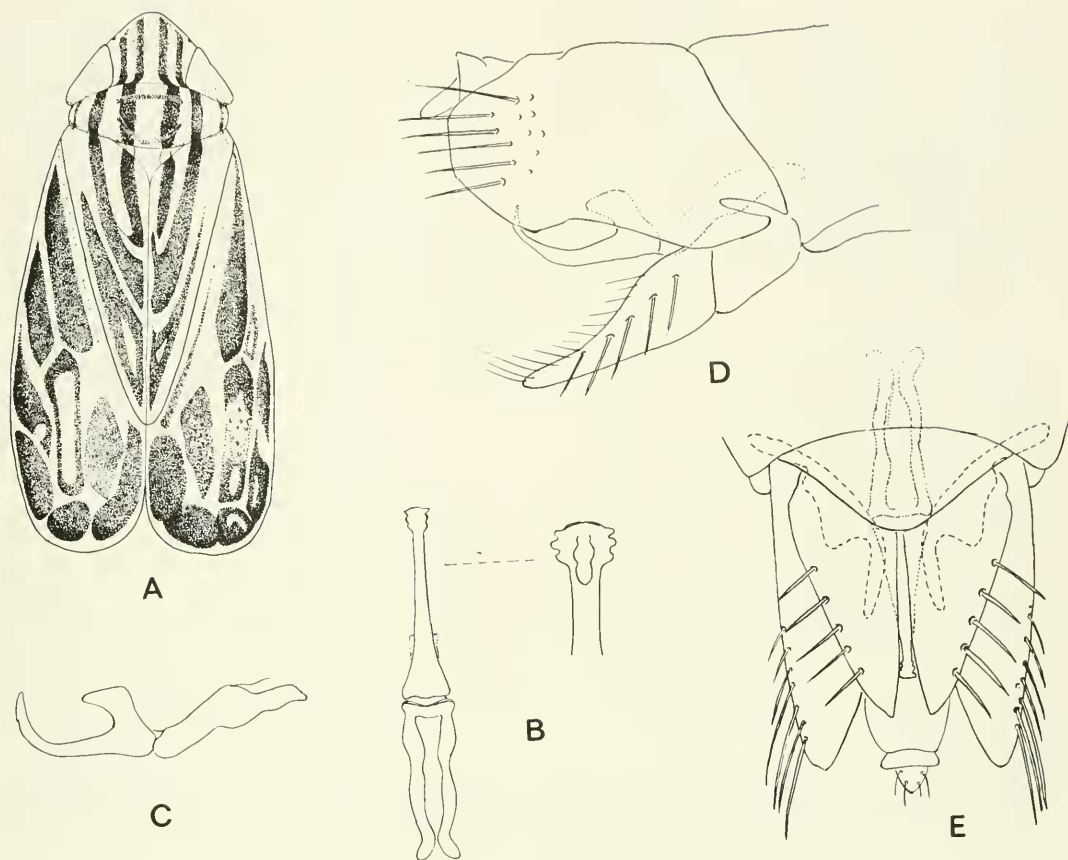


Fig. 1. *Pazu monoingo*, n. sp.: A, adult female habitus; B, male aedeagus and connective, dorsal view; C, male aedeagus and connective, lateral view; D, apex of male abdomen, lateral view; E, apex of male abdomen, ventral view.

with two pairs of arclike, subapical, fuscous markings and occasionally with a pair of rectangular, basal, fuscous spots next to clypeus; frons apparently never clouded with fuscous as in *P. balli*. Thorax with six fuscous, longitudinal lines, thickest lines medial, all lines lighter than those on crown. Abdominal dorsum with three pairs of longitudinal, fuscous lines, the lateral pairs often coalescing to form bands twice the width of medial pair. Venter cinereous variously marked with fuscous, especially on anterior median areas of sternites. Legs cinereous with two or more fuscous spots or bars on femora, other leg segments darker near spines and at spine bases. Elytra reduced (micropterous as delineated by Oman 1987), barely reaching ninth abdominal segment. Most elytral cells filled to a greater or lesser degree with fuscous; all veins or cells on either side of claval vein usually clear or white. Wings reduced, ca 1/2 x

length of elytra. There appears to be no color or other dimorphisms between the sexes.

**MALES.**—Length 3.4–3.7 mm (mean 3.6 mm), specimens slightly shriveled due to preservation methods. Wing length 2.4–2.7 mm (mean 2.6 mm); vertex length 0.4–0.6 mm (mean 0.5 mm); transocular width 1.0–1.3 mm (mean 1.2 mm); interocular width 0.4–0.6 mm (mean 0.6 mm). Pygofer shorter than in *P. balli*, more truncated, with just a vestige of a tooth on lateroventral corners; weakly setose. Plates evenly tapered to acute apices and completely divided, not basally fused and truncate as in *P. balli*; spine-like setae uniseriate. Style apices J-shaped, medial apex long, slender, very slightly curved laterad; lateral tooth broadly triangular. Connective linear, about as long as aedeagal shaft. Aedeagus roughly V-shaped; anterior arm broader, apex curved posteriorly;

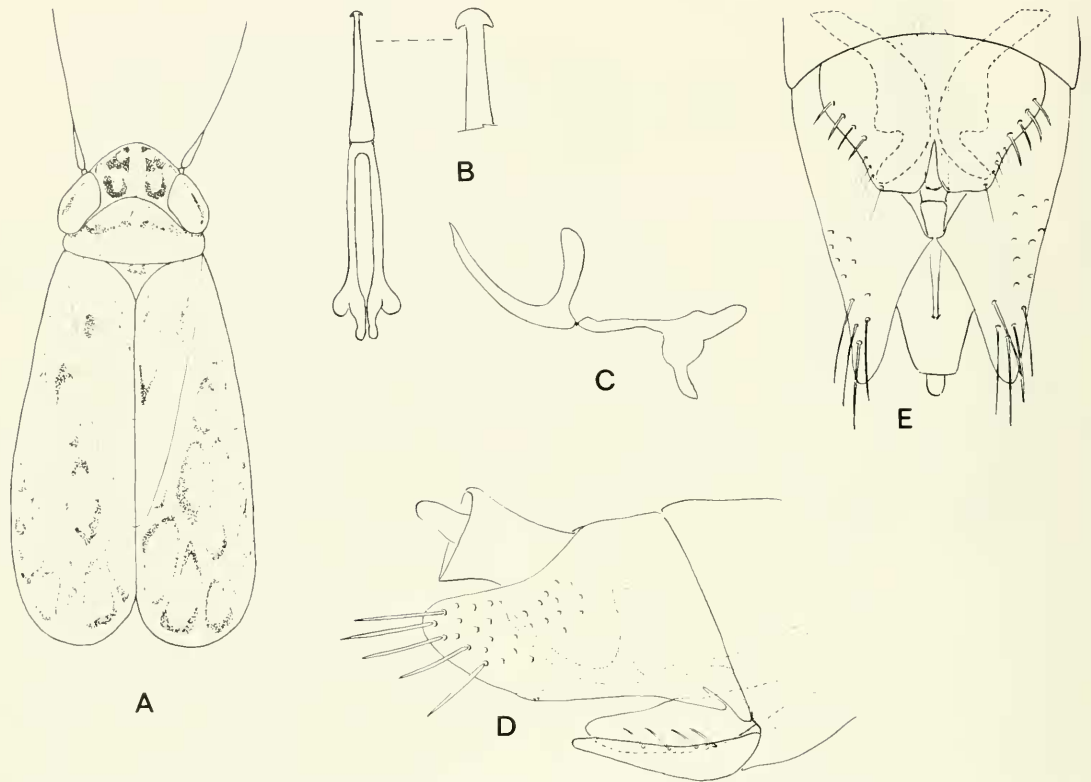


Fig. 2. *Pazu balli* (Beamer): A, adult female habitus; B, male aedeagus and connective, dorsal view; C, male aedeagus and connective, lateral view; D, apex of male abdomen, ventral view.

posterior arm ca 1/2 x width of anterior, gradually and evenly tapered to apex, crescentic in lateral view. Aedeagal apex with three pairs of apicolateral flanges or blunt teeth.

**FEMALES.**—Length 4.6–5.0 mm (mean 4.6 mm). Wing length 2.9–3.1 mm (mean 3.0 mm); vertex length 0.7–0.9 mm (mean 0.7 mm); transocular width 1.4–1.6 mm (mean 1.4 mm); interocular width 0.6–0.9 mm (mean 0.6 mm). Last ventral segment with broadly rounded, posteriorly directed median lobe.

**ETYMOLOGY.**—The name *monoinyo* is a noun in apposition referring to the two localities where the species was collected, Mono and Inyo counties, California.

**DISCUSSION.**—*Pazu monoinyo* is similar to the generic type, *P. balli*, in color pattern and male genitalia. Color patterns differ in that the dorsal, longitudinal lines tend to be much darker and more distinct on the head and thorax in *P. monoinyo*, but much lighter and with a tendency to coalesce in *P. balli*. The

male genitalia differ in that the pygofer is much shorter in *P. monoinyo*; the plates are completely divided and have acute apices in *P. monoinyo* compared with basally fused, truncate plates in *P. balli*. The last ventral segment of the female is lobed posteriorly in *P. monoinyo* but deeply cleft in *P. balli*. All known specimens of *P. monoinyo* exhibit microptery, whereas all those of *P. balli* are macropterous.

Specimens of *P. balli* are known from Cochise and Pearce, Cochise County, Arizona.

**MATERIAL EXAMINED.**—Male holotype and female allotype: "Calif., Mono Co., 9 mi N Bishop, Fish Slough, 4,200', sand dunes, V-12-82 to XII-20-82, Derham Giuliani, collected in ethylene glycol pit trap." Paratypes: "Calif., Mono Co., 9 mi N Bishop, Fish Slough, 4,200', sand dunes, V-12-82 to XII-20-82, Derham Giuliani, collected in ethylene glycol pit trap," 4 males and 2 females; "Calif., 3 mi E Bishop, 4,100', sand dunes,

V-12-82 to XII-10-82, antifreeze pit trap, D. Giuliani," 1 male and 4 females; "Inyo Co., Ca., Deep Springs Valley, VI-9-78, antifreeze pit trap, D. Giuliani," 1 female.

TYPE DEPOSITION.—The holotype and allotype (both CAS Type #16039) were deposited in the California Academy of Sciences, San Francisco (CAS). Twelve paratypes were deposited as follows: 2 males, 2 females, San Francisco (CAS); 2 males, 4 females, California Department of Food and Agriculture, Sacramento (CDFA); 1 male, 1 female, United States National Museum, Washington, D.C. (USNM).

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